EJTIR

Issue 11(4)
September 2011
pp. 368-388
ISSN: 1567-7141
www.ejtir.tbm.tudelft.nl

The Advantage of 'Near': Which Accessibilities Matter to Whom?

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This paper explores people's preferences for living close to destinations such as work, service, leisure and social activities, satisfaction with the proximities offered by their residential location, as well as more general residential satisfaction. The paper draws on the literature on accessibility, residential choice and residential preferences, and is empirically based on a survey targeted at individuals aged 20-64 in the Swedish population. The results suggest that 'proximity preferences' are structured by both practical and social rationales. Preferences also differ to varying degrees between groups with respect to gender, age and type of residential environment. Self-reported distances are short for virtually all destinations except those relating to social relations. People's satisfaction with their residential location relative to their everyday life accessibility needs is also explored in regression analyses. The findings imply that residential location satisfaction is related to type of residential environment, dwelling type/tenure, whether the respondents had considered moving to increase the proximity to certain destinations, and their level of satisfaction with the distances from home to various destinations.

Keywords: proximity, accessibility, mobility, residential preferences, residential satisfaction

Introduction

Proximity and mobility are key components of individuals' accessibility to everyday life destinations – if the destinations are not located nearby, then the distance is bridged through travel. This paper addresses the proximity ('near') aspect of accessibility. The importance of proximity to relevant destinations may be considered in terms of its 'practical' quality as a facilitator in everyday life, since it reduces the need for travel[2]. Furthermore, people may also want to be in proximity to destinations which represent 'things' which are important in the larger picture of life.

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[2] While, e.g., commuting is conventionally understood in negative terms, this is contested by some researchers who argue that travel sometimes has an intrinsic value per se, independent of activities undertaken at the destination (e.g., Mokhtarian & Salomon 2001, Jain & Lyons 2008), and that travel is by no means necessarily 'dead time that people always seek to minimize' (Sheller & Urry 2006, p. 213). It has also been suggested that people do not necessarily opt for the closest point when choosing between alternative destinations, with 'excess travel' as a result (Salomon & Mokhtarian 1998).

Moreover, to the extent that proximity from home to relevant destinations is important, it may also affect individuals' residential quality and satisfaction.

However, it is possible that proximity may also be regarded as unimportant or even undesirable, concerning destinations that are irrelevant or negatively valued or to which (too much) proximity is not necessarily desirable. In some cases, people may want to have a certain distance between their home and their destination, e.g., their workplace (cf. Lynch 1981; Mokhtarian & Salomon 2001; Sandow & Westin 2010). The thresholds for when proximity becomes 'too much of a good thing' presumably vary across destinations as well as individuals.

Living at just the 'right' distance – whether near or far – to relevant destinations perhaps represents an optimal residential location. Since reality often does not cater to attaining such ideal conditions, residential location becomes a compromise by which some preferences are traded off and others are prioritized. This paper explores these preferences and their interpersonal individual variations, as well as individual residential satisfaction.

Purpose and research questions

This study is concerned with accessibility in terms of the geographical proximity (or distance) between individuals' residential location and a set of destinations (see Table 1). The aim is twofold. First, it is to analyse individual 'proximity preferences' (i.e., valuations of the importance of living close to the various destinations), and whether these preferences correspond to actual conditions in terms of 'distance satisfaction' (i.e., satisfaction with self-reported de facto distances). Second, the aim is to identify factors that influence individuals' satisfaction with their residential location.

Preferences are dynamic and fluid between and, over time, within individuals (cf. Fransson et al. 2001; Lind & Bergenstråhle 2004). With the exception of universally relevant general preferences, proximity preferences are understood as being individual (personal), since the destinations to which we need or wish to have access are not the same for everyone.

The importance of gender, age and living environment is explored in the following analyses, as possible structors of proximity preferences. Gender is related to, e.g., mobility resources and travel and activity patterns (e.g., Brusman 2004; Prashker et al. 2008) which may be reflected in women's and men's proximity preferences. Residential preferences also vary across the life course, e.g., in relation to the presence of children, household structure or changing personal interests (Krizek & Waddell 2002; Kim et al. 2005b; Devisch et al. 2009). Proximity preferences may also be related to the availability of destinations, which differs widely across geographical settings, most obviously concerning rural vs. urban areas. The characteristics of the places where people live may reflect their residential preferences and lifestyles to some extent (Findlay & Rogerson 1993; Renkow & Hoover 2000; Hjort 2009).

Literature Review

Accessibility

The literature on accessibility is vast and complex, and numerous operationalizations have been employed in empirical research (e.g., Geurs 2006; Neutens et al. 2008). In the present paper, proximity is argued to be a key aspect of individuals' everyday life. However, emphasizing proximity does not imply that 'accessibility can be reduced to proximity' (Weber 2003, p. 52) – and undoubtedly many aspects of individual accessibility are left unaddressed, e.g., transportation infrastructure, land use patterns and economic prerequisites.

Geographical definitions of accessibility follow two general strands. Place (location)-based accessibility targets 'the proximity of places to other places' (p. 166), while the second view focuses on individuals' activities and emphasizes daily activity schedules and constraints (Horner 2004). According to a basic definition, accessibility is inversely related to geographical distance; the cost of bridging the distance; or the amount of possibilities at a certain location (Martellato & Nijkamp 1998). At the individual level, accessibility may be defined as 'the ease of reaching needed or desired activities' (Handy & Clifton 2001, p. 68). Proximity (or distance) is a component of place-based accessibility measures, but is on its own not necessarily a sufficient or universally relevant criterion for accessibility. Travel times, trip-chaining, fixed or flexible daily activity schedules and physical or virtual travel behaviour are but a few issues that may be equally or more important depending on the situation at hand (e.g., Kwan & Weber 2003; Weber 2003; Neutens et al. 2008). Nevertheless, several studies have found distance to be an important explanatory accessibility variable (Prashker et al. 2008), and distance may also be considered as a proxy for travel time.

Accessibility, e.g., in terms of travel time or transportation costs, is often seen as an influential factor in residential choice decisions. However, local housing and neighbourhood attributes – e.g., a 'pleasant and safe residential environment' (p. 6) may be just as important as avoiding travel, for people who are well-endowed in mobility resources (Molin & Timmermans 2002), and the importance of distance is reduced as income levels rise (Prashker et al. 2008). However, an identical residential location offers different degrees of accessibility for different people depending on their specific daily activity schedules (Ben-Akiva & Bowman 1998; Devisch et al. 2009). Changes in such patterns (e.g., workplace changes), come with associated accessibility changes for those concerned (cf. Kwan & Weber 2003). Hence, it may be argued that the 'location within the /…/ environment /…/ [of] the activity space of individuals' (Weber 2003, p. 64) is more important than the overall distribution of destinations.

Geographical aspects of accessibility include both physical spatial relationships (distance or proximity) between places (origins and destinations) and mobility (distance-bridging through physical or virtual means, cf. Urry 2002; Kwan & Weber 2003). Accessibility is also dependent on the time-geographical constraints concerning authority, capability and steering (Hägerstrand 1970; Lenntorp 2004). Mobility requires certain resources (personal vehicles, public transportation and transportation infrastructure) that are unevenly distributed across sub-groups (e.g., according to gender, age, economic prerequisites and disabilities), hence influencing their distance-bridging ability (Lynch 1981; Reneland 2000; Knowles 2006). The perception of proximity may also depend on, e.g., car ownership and income level (Kim et al. 2005b).

Plausibly, individual-level accessibility needs and/or wishes should be understood as subjective and relative, implying that individual preferences must be accounted for. Our wishes and preferences vary; indeed, as argued by Handy & Clifton (2001, p. 77) 'the key to identifying the factors that contribute to [neighbourhood] accessibility is to examine their relative importance to residents'.

Residential preferences and choice

A (more or less) permanent residential location choice largely defines the prerequisites for subsequent destination choices in an everyday life context. Hence, there are interrelationships between longer-term (e.g. residential location) and shorter-term (e.g. daily mobility) spatial choices (cf. Krizek & Wadell 2002). To some extent, choosing where to live means choosing where to go – or at least limits the possibilities.

Residential choice can be understood as a trade-off (Kim et al. 2005a; Kim et al. 2005b, Prashker et al. 2008) which is influenced by limitations to the potential for simultaneously fulfilling an array of different, and sometimes conflicting, residential preferences. Basic constraints – not explicitly addressed in the present study – obviously include, e.g., housing availability and the household's

economic reach. Different concerns and preferences cannot all be fulfilled in the same residential location/dwelling (cf. Schwanen & Mokhtarian 2004; Næss 2005; Kim et al. 2005a; Kim et al. 2005b), and certain strong preferences may render other considerations secondary (Kim et al. 2005b). Also, residential preferences and needs are dynamic, and as they change over time, the 'utility' of the current housing situation may change accordingly, rendering it sub-optimal (Devisch et al. 2009; Lovejoy et al. 2010).

Lind & Bergenstråhle (2004) found that most people equate their current residential location of dwelling with their preferred one, which perhaps indicates that residential self-selection processes are at play. People who live according to their preferences are satisfied with their residential conditions – conditions that are not coincidental but rather the result of self-selection through the pursuit to fulfil residential preferences.

There is a tension between the individual and the household in the residential choice literature. Residential choice is often understood as dependent on individual preferences, but since these are often embedded in the household context that also includes other people, the individual's freedom of choice may be circumscribed. The household members' preferences are negotiated and coordinated in the final, joint decision (Ben-Akiva & Bowman 1998; van der Klis & Mulder 2008; Devisch et al. 2009). Multiple residential preferences are often in conflict with each other, especially in households consisting of several individuals with different preferences and needs (Næss 2005; Lovejoy 2006). Incompatible residential qualities involve, e.g., urban contra rural qualities, but may also apply within urban areas, e.g., in terms of differences in the amenity structures of central compared to peripheral locations (Salomon & Mokhtarian 1998; Næss 2006).

Residential choice is influenced by characteristics pertaining to dwelling unit, location, accessibility and the individual (Prashker et al. 2008). While much research on residential location preferences has focused on job accessibility (Horner 2004; Prashker et al. 2008), important considerations also include, e.g., environmental amenities and neighbourhood service facilities. People seek residential locations that aid them in fulfilling values or goals in the different stages of their lives (Fransson et al. 2001), and the relative importance of residential qualities/amenities vary across the life course. For instance, individuals with children tend to value greenspace and recreational opportunities, while individuals without children prefer residential locations that offer convenience, e.g., in terms of access to services (Kim et al. 2005b). Motives for migration also vary with age, with for instance young people emphasizing education and employment opportunities, whereas, e.g., 'residential concerns' are more relevant for older people (Lundholm 2007).

Individual socioeconomic characteristics (e.g., education and income) may influence 'how people rate the importance of neighbourhood attributes…' (Fransson et al. 2002 in Niedomysl 2008, p. 1112). As for geographical factors, residential preferences are nested and scale-dependent (Kim et al. 2005a; Niedomysl 2008). Residential preferences may vary among residents of cities of varying size (Fransson et al. 2002; Lind & Bergenstråhle 2004), and potential migrants' residential preferences also vary across geographical scales. Whereas social and occupational factors are the most important on a regional scale, various housing- or dwelling-related issues are relevant at area and neighbourhood levels (Niedomysl 2008).

Residential satisfaction

Residential satisfaction, and residential location for that matter, can be considered on different spatial scales, from the dwelling unit to, e.g., urban district, and residents' valuations may vary accordingly (cf. Lind & Bergenstråhle 2004). Previous studies also address the issue from different approaches, the neighbourhood level being the most common spatial scale (Hur & Morrow-Jones 2008). Many studies focus on the relationship between desired and subjectively perceived 'actual' living conditions in terms of concordance or discrepancy, and relate this to the individu-

als' level of satisfaction (Lovejoy 2006; Vera-Toscano & Ateca-Amestoy 2008, Diaz-Serrano & Stoyanova 2009).

The place of living not only fulfils the purpose of dwelling but also provides, e.g., social context and access to services and facilities, and is therefore of great importance in life (Vera-Toscano & Ateca-Amestoy 2008; Fleury-Bahi et al. 2008). Residential (neighbourhood) satisfaction is related to sense of community (social cohesion) and quality of life, and may also predict residential mobility; with high satisfaction encouraging staying as well as in-migration and vice versa concerning low satisfaction (Hur & Morrow-Jones 2008; Vera-Toscano & Ateca-Amestoy 2008; Diaz-Serrano & Stoyanova 2008; cf. Lind & Bergenstråhle 2004). Besides individual characteristics, attempts to identify the determinants of residential satisfaction often include examination of different environmental aspects (e.g., physical, sociocultural and economic attributes) and the availability of nearby amenities (e.g., services) (Lovejoy et al. 2010). Among the individual attributes, the factors which been found to be associated with higher levels of residential (neighbourhood) satisfaction include older age, dwelling ownership, freedom from mobility constraints, and a positive general attitude towards life (Lovejoy 2006).

Methods and Data

Methodologically, the present study employs descriptive statistics and linear regression models (Ordinary Least Square). The empirical basis is a questionnaire survey that targeted 19,953 randomly selected individuals, aged 20-64, in the Swedish population. A 15.6% (n = 3,110) response rate was obtained after two waves of Internet-based data collection in May – August 2008.

The core issues in the survey were the respondents':

- distances to various destinations,
- valuation of the importance of proximity to these destinations, and
- satisfaction with the distance.

Accessibility is considered in terms of the proximity (location) aspect, but also emphasizes the individual component (Geurs & van Wee 2004; Horner 2004) of accessibility in terms of individuals' needs and preferences, rather than arbitrarily assuming that all destinations are equally relevant to everyone. The respondent's home was chosen as the geographical focal point; i.e., the place to or from which distances to other destinations were related[3]. Home is the one geographical point of reference that is universally relevant for everyone, and a fundamental basis for everyday life (Ellegård & Wihlborg 2001; Lind & Bergenstråhle 2004). It is also the point of departure for most everyday life activities; a key 'pocket of local order' (Lenntorp 2004; Ellegård & Vilhelmson 2004), and the one place people always come back to (Lenntorp 1976 in Ellegård & Vilhelmson 2004).

The questionnaire was constructed on the basis of a selection of destinations representative of different activities (Table 1). The specific destinations are also representative of other destinations to some degree. For instance, 'urban centre' represents various establishments and services not explicitly included in the survey: a relatively wide range of commercial facilities and public services. This also includes a potential social dimension in terms of being a meeting place (Oldenburg 1999).

The approach to data collection hybridizes traits of regular and web survey techniques. While respondents were contacted by regular mail, the survey itself was electronic. The survey contents

[3] Alternative geographical focal points were considered. For instance, since many people combine working with running other errands, the individual's workplace might have been an option had the target population been the working population only, which was not the case.

were partially custom-built for each respondent through 'automatic question filtering' (Yun & Trumbo 2000)[4]. The web survey approach was also motivated by the need for such interactivity, stemming from the design of the questionnaire.

Compared to regular mail surveys, electronic surveys generally yield lower response rates (e.g., Cook et al. 2000; Kaplowitz et al. 2004). The risk of high non-response due to the web-based approach motivated drawing a large sample, as a low (relative) response rate may be partially compensated for by a large (absolute) number of responses, and hence variation in the data.

Access to and familiarity with the Internet is the main predictor of respondent cooperation in web surveys (Vehovar et al. 2002). Although Internet penetration in Sweden is generally high (SIKA 2006; 2007) certain groups[5], including retirees, are overrepresented among those who have neither Internet experience nor access. This motivated setting an upper age limit of 65 for the sampling frame (SIKA 2006). The rationale behind the lower limit (age 20) was the focus on the adult population.

Table 1. Destinations in the study

Work	Children's activities	Service	Leisure	Social/family
Workplace	Child care	Most frequently used grocery store	Cinema	Adult children
	Children's school	Shopping centre with various stores and service facilities	Theatre	Parents
		Store for clothes, shoes, etc.	Restaurant	Best friend
		Store for electronics, household appliances, etc.	Leisure/recreational area	Relative
		Care centre	Gym/sports centre	
		Pharmacy		
		Cashpoint/ATM		
		Post office		
		Job centre		
		Petrol station with small range of groceries, etc.		
		Urban centre		

The obtained response rate is in line with what might be expected, considering the prerequisites of the study[6]. Although non-response rates do not necessarily cause non-response bias (Cook et

[4] For instance, only those respondents whose main occupation was work were presented with questions related to their job; and only those respondents who had a recent migration experience were asked to elaborate on this issue.

[5] In 2003/2004, most Swedes (77%) had experience of using the Internet, and 71% could access the Internet from their homes (SIKA 2006). According to a national survey (SIKA 2007) those who are elderly, disabled, or have foreign background or low income have lower levels of information technology access compared to those with high education and income. Women and older people are overrepresented among the circa 20% of the population who lack Internet access (SIKA 2006).

[6] As a comparison, surveys carried out by Statistics Sweden in which respondents could choose between responding through a paper questionnaire or a web application have yielded response rates of 10-15% (Holmberg et al. 2007).

al. 2000; Schwanen & Mokhtarian 2004)[7], comprehensive[8] non-response analysis was nevertheless motivated. Because respondents in the early and latter phases of survey administration tend to differ from each other (Batagelj & Vehovar 1998; Willke et al. 1999 in Vehovar et al. 2002), comparing these groups is a plausible non-response analysis strategy (Sax et al. 2003).

Respondents in the first and second data collection waves were compared across all the questionnaire variables. There were differences[9] concerning background factors, partially reflecting the 'digital divide' in the Swedish population (SIKA 2007), and also concerning some other questionnaire items. Although the sample cannot be assumed to be perfectly representative of the target population, which imposes some limitations concerning generalization of the results, there are no alarming signs of systematic differences on key research variables.

Results

In the following, results are presented for key issues: proximity preferences; distance satisfaction; residential satisfaction and self-reported distance. For the former three, preferences were measured on scales ranging from 1 '(not at all important'/'very dissatisfied') to 5 ('very important'/'very satisfied') with a neutral middle point (3; 'neither').

Total results for all respondents are presented along with results across gender, age and geographical categories[10] that represent self-reported types of residential areas. In the following, all mentioned differences between the groups were significant at least at a $p<0.05$ level.

Proximity preferences and distance satisfaction

Figure 1 shows mean values of the respondents' valuations of the importance of living close to the various destinations (proximity preferences), and their satisfaction with their self-reported de facto distance (distance satisfaction).

It was regarded as important to live close to several destinations which are visited more or less on an everyday life basis, e.g., child care, work and grocery store. The high ranking of destinations related to children's activities indicates that accessibility needs are not strictly personal. In their valuations, respondents took into account family members' needs. For instance, proximity to the children's school was deemed more important than proximity to the respondent's own workplace. This may be related to different daily mobility patterns among children and adults, e.g., in terms of travel mode – children are more likely to use non-motorized modes of transport, and are therefore more in need of proximity (walking or biking distance) to their everyday life destinations.

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[7] As pointed out by Cook et al. (2000), the representativeness of the collected responses is of greater importance than the response rate – as long as these responses are representative of the (entire) sample. The magnitude of non-response error in surveys is determined by a combination of the non-response rate and the differences between respondents and non-respondents regarding key research variables and other characteristics (Groves & Couper 1998 in Couper 2000).

[8] A full (unpublished) account of the non-response analysis is available from the author on request. This analysis includes, inter alia, non-response prevention and click-through rate (Porter & Whitcomb 2003) comparisons.

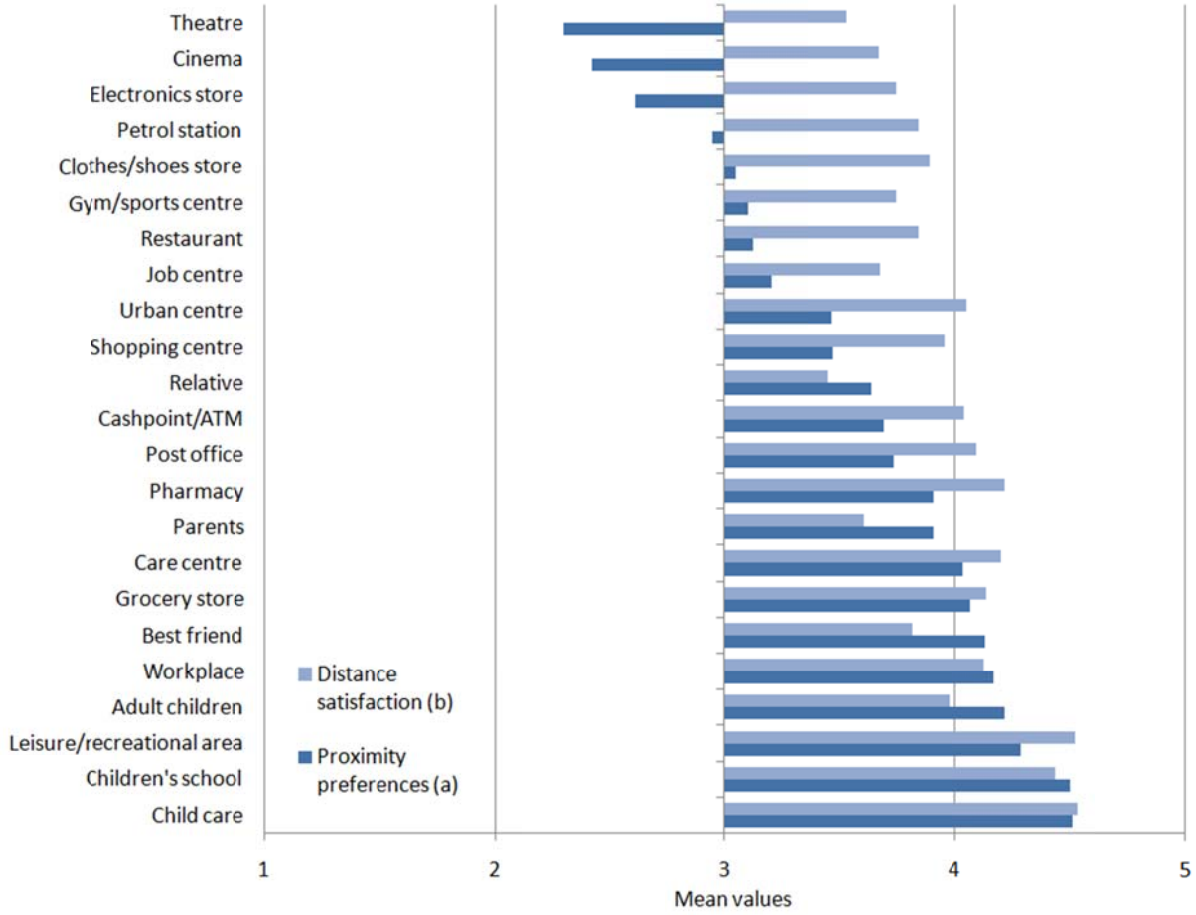
[9] Significant differences: *country of origin* ($p<0.01$), *education* ($p<0.01$) *age* ($p<0.05$), *Internet access at work* ($p<0.05$); whether respondents had *considered moving* to increase proximity to child care/children's school ($p<0.05$); *proximity preferences* (items: child care, clothes/shoes store, electronics store and post office: $p<0.01$; petrol station: $p<0.001$); *distance satisfaction* (item: care centre: $p<0.01$); *frequency* of visiting destinations (items: gym/sports centre $p<0.01$; urban centre $p<0.05$).

[10] The geographical categories are based on Statistics Sweden's definition of 'locality': 'a group of buildings normally not more than 200 meters apart from each other, and must fulfil a minimum criterion of having at least 200 inhabitants' (Statistics Sweden 2009, p.87). In 2005, 84% of the population lived in localities.

Proximity to leisure/recreational areas was also highly valued, which perhaps supports the notion of Swedes as a nature-loving people (cf. Sörlin 1995; Hörnsten 2000). Only a few destinations were valued as relatively unimportant: theatre, electronics store, etc. Proximity to social relations – especially adult children and best friends – was also considered very important.

As a whole, these results suggest two dimensions in proximity preferences: proximity based on *practical* considerations and everyday life needs, and proximity that is motivated by family and *social* ties – people value proximity to important functions in everyday life and to things that matter in the larger picture of life, in a more personal or social sense.

Distance satisfaction, i.e., the respondents' satisfaction with the location of the various destinations in relation to their homes, was generally high. For most destinations, the valuations of satisfaction even 'surpassed' the proximity preference valuations. This may be interpreted as 'proximity surpluses' for, e.g., cultural and commercial establishments. Simultaneously, there were 'proximity deficits' concerning social relations. The respondents would like to live closer to adult children, parents, best friends and relatives, indicating that the geographical dispersion of social networks is considered to be somewhat unsatisfactory or problematic. These were the only destinations where actual conditions failed to correspond to preferences.



(a) Measured on a 5-point scale where 1 = Not at all important; 3 = Neither; 5 = Very important
(b) Measured on a 5-point scale where 1 = Very dissatisfied; 3 = Neither; 5 = Very satisfied

Figure 1. Proximity preferences and distance satisfaction (mean values for all respondents)

There is an inherent urban bias in accessibility comparisons across urban-rural categories. While rural areas suffer from an 'accessibility problem' in terms of long distances to many destinations (Nutley 1998; Woods 2005), urban areas typically offer a larger and nearer supply of services. Since destination availability by and large follows population distribution and is concentrated to urban areas, accessibility is 'automatically' higher for urbanites. De facto differences may also cause rural and urban dwellers to differ in terms of 'distance tolerance', what they consider near or far.

When dividing respondents into geographical categories, the overall pattern of proximity preferences remains. Urban and rural dwellers expressed similar proximity preferences for most destinations. The differences were most apparent between rural areas and the 20 largest cities, the most 'different' geographical settings. Urbanites placed more emphasis on proximity to, for instance, urban centre ($p<0.001$), grocery store ($p<0.001$), gym/sports centre ($p<0.001$), shopping centre ($p<0.001$) and leisure/recreational area ($p<0.001$), whereas rural residents ranked proximity to a petrol station ($p<0.001$) with a small range of groceries higher. Apart from being important for the often car-dependent countryside dwellers, these facilities also play an important role in service provision in sparsely populated areas (National Rural Development Agency 2008). That less value is placed on proximity to leisure/recreational areas may indicate that this is perceived as ubiquitous in rural areas.

Distance satisfaction was systematically higher in the 20 largest cities compared to rural areas. It was only in the case of distance to parents ($p<0.05$) that the rural dwellers were more satisfied than urbanites – possibly because they (and their parents) have remained where they grew up to a greater extent than the urbanites have. Since service provision is lower in rural compared to urban areas, some degree of dissatisfaction might be expected. The reasons why rural dwellers were less satisfied with the distance to their best friends ($p<0.001$) are, perhaps, less obvious.

Men and women expressed similar proximity preferences. However, women valued proximity higher for all destinations, and were also more satisfied with the distances (for instance clothes/shoes store ($p<0.001$); theatre ($p<0.001$); parents ($p<0.001$) and pharmacy ($p<0.001$)). The gender difference may be explained by women's tendency (as a result of gender socialization) to score higher than men on attitudinal scales (cf. Schan & Holzer 1990; Stern et al. 1993; Croson & Gneezy 2009). Another interpretation is that women emphasize proximity because, as a group, they are disadvantaged concerning car access (cf. Krantz 1997). Men's better access to cars potentially renders their accessibility more mobility-orientated, whereas women's accessibility may be dependent on proximity to a somewhat larger extent.

Different life situations and activity patterns, and changes in these throughout the life course, reflect the relevance of the destinations. Comparing proximity preferences across age groups shows that younger age groups placed higher value on proximity to, e.g., child care ($p<0.001$), best friend ($p<0.001$), gym/sports centre ($p<0.001$) and restaurant ($p<0.001$). Older respondents placed more emphasis on proximity to, for instance, care centre ($p<0.001$), pharmacy ($p<0.001$) and theatre ($p<0.001$). Distance satisfaction also varied across age groups, although less so than proximity preferences. Respondents in the younger age groups were more satisfied with distances to, e.g., clothes/shoes store ($p<0.01$) and restaurant ($p<0.001$), whereas older respondents were more satisfied with distances to relatives ($p<0.01$), best friends ($p<0.001$), parents ($p<0.05$) and work ($p<0.05$).

Distance

Figure 2 shows the distribution of the respondents' self-reported distances to the destinations in quartiles. The shortest median distances were reported for everyday life-type destinations and destinations that are available in most localities, e.g., leisure/recreational area, child care, post office and care centre. Half of the respondents lived within five (5) kilometres of all destinations

except work, theatre, adult children, parents and relatives. Distances were considerably longer to parents, adult children and relatives. Among these social destinations, only best friends were within shorter distances and hence somewhat 'similar' to the everyday life destinations.

Comparing the respondents' approximate distance and distance satisfaction showed that although distance satisfaction was high where distances were short (e.g., leisure/recreational area and child care), the two were not necessarily correlated. The respondents also expressed satisfaction with distances to destinations located further away, e.g., work and adult children – although, as mentioned above, there were also signs of 'proximity deficits' concerning the social relations.

The above-mentioned pattern of far-away social relations and nearby daily life destinations remains when comparing distances across geographical categories. Unsurprisingly, rural dwellers had longer[11] average distances than did urbanites. However, there were no significant differences for several of the destinations that ranked high in proximity preferences, e.g., work, child care, leisure/recreational area and all social destinations.

No significant differences were found between men and women except concerning distance to a theatre, which was shorter ($p<0.05$) for women. Comparing across age groups, the only significant difference was found concerning adult children ($p<0.001$), to which the average distances were longer in the 40-49 age span compared to the other groups.

Residential satisfaction

Since accessibility to relevant destinations is presumably taken into account in most residential choice processes, residential satisfaction may be affected by individual valuations of the accessibilities offered by the dwelling, in terms of the correspondence between proximity preferences and de facto distances.

Residential satisfaction is measured on three spatial scales: the general residential area (e.g., the urban locality); the location of the dwelling; and the dwelling unit per se. For the former two levels, the respondents evaluated their residential satisfaction in relation to their everyday life accessibility needs. The spatial scales were not described in more detail, leaving it open for the respondents to make their own interpretations.

High residential satisfaction was reported on all three spatial scales, although it differed across these scales between urban and rural dwellers (Figure 3). The differences were most apparent between respondents in the most densely and the most sparsely populated environments, whose valuations were practically each other's opposites. Urban residents were particularly satisfied with their general area of residence ($p<0.001$) and the location of their dwelling ($p<0.001$), but less satisfied with their dwelling itself ($p<0.001$). Rural residents were more satisfied with their dwelling unit than with their general residential area and location.

These results reflect the ways in which residential prerequisites and trade-offs vary across residential environments. Urbanites and rural dwellers make different 'sacrifices' regarding residential qualities; e.g., living space or private garden in cities, or local accessibility to services in the countryside. In rural areas, the qualities of the dwelling may compensate for these disadvantages, whereas in the city, accessibility qualities compensate for, e.g., higher living/housing costs and a smaller living space.

[11] Differences were significant (at least $p<0.05$) for the following destinations: store for electronics, etc.; theatre; job centre; shopping centre; store for clothes/shoes, etc.; urban centre; cashpoint/ATM; petrol station; gym/sports centre; care centre; grocery store; pharmacy; post office; and restaurant.

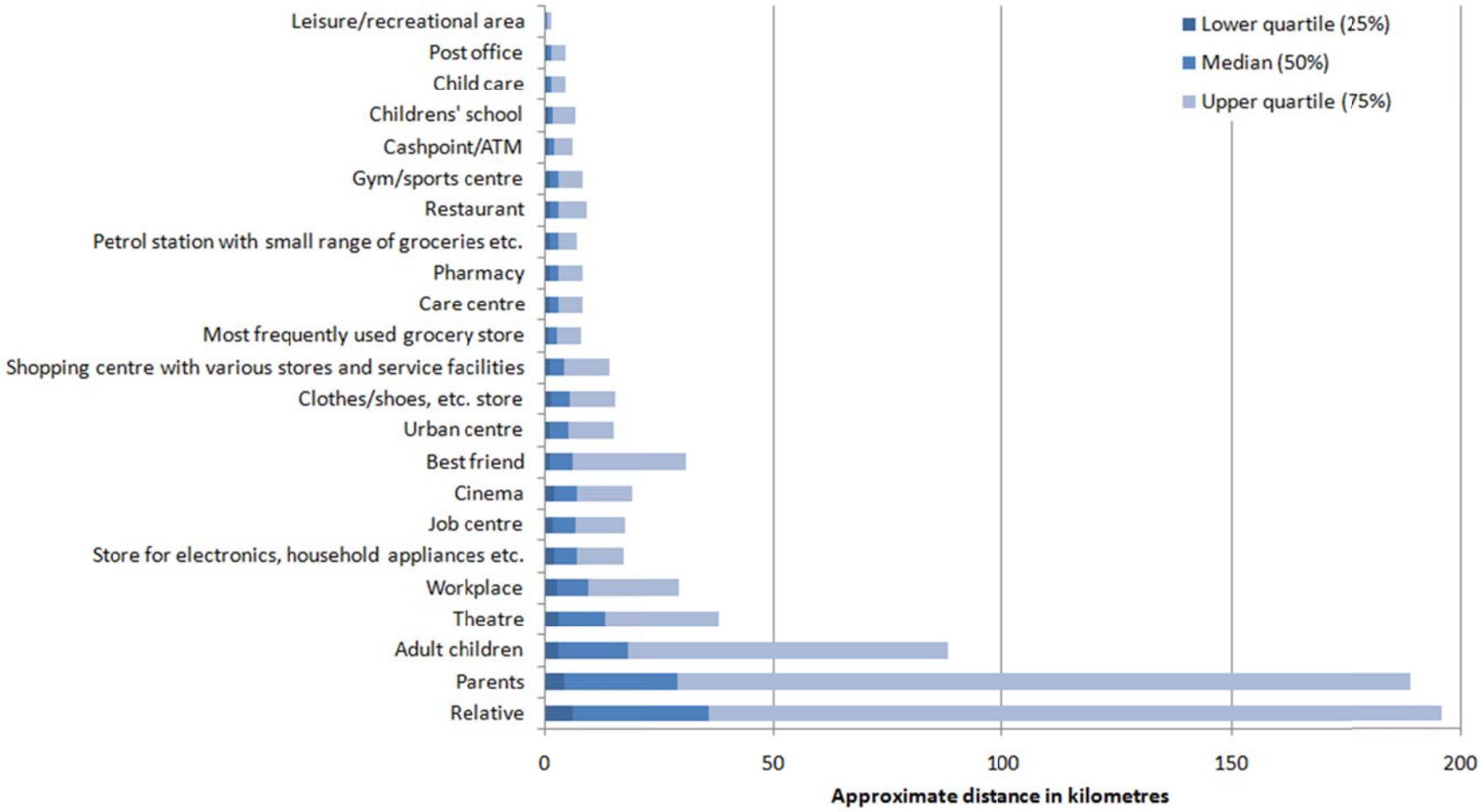


Figure 2. Approximate distance, in kilometres, to various destinations (distribution in quartiles for all respondents)

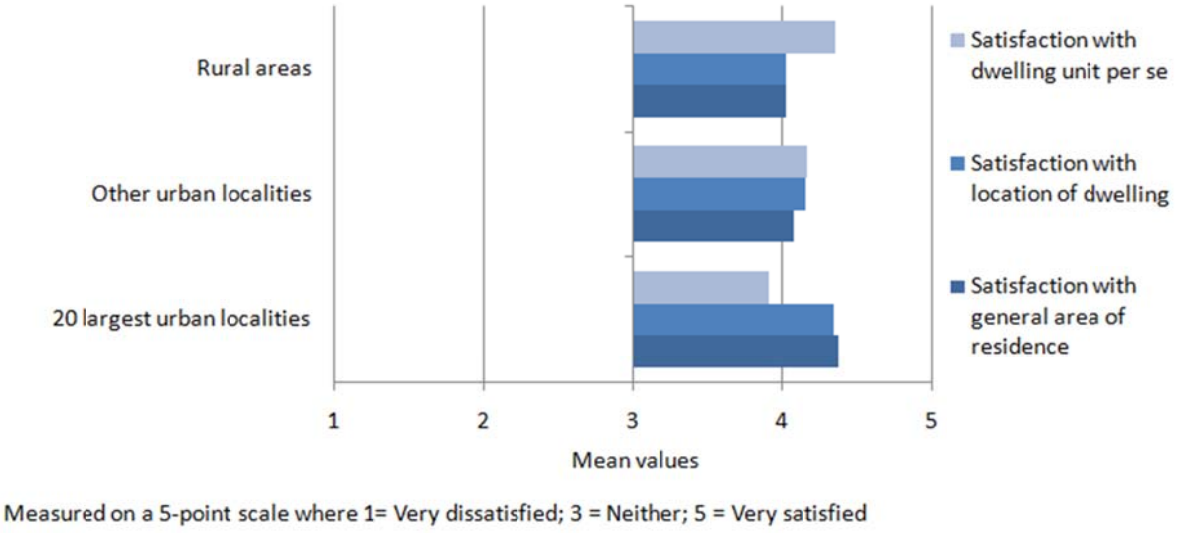


Figure 3. Satisfaction with general residential area, location of dwelling and dwelling per se, by residential area (mean values)

Men and women differed in terms of dwelling unit ($p<0.01$) and general residential area satisfaction ($p<0.05$); in both cases, women expressed slightly higher satisfaction.

Dwelling location ($p<0.01$) and dwelling unit ($p<0.001$) satisfaction differed across age groups. Dwelling unit satisfaction increased with age, the youngest being the least satisfied and the oldest the most satisfied. A plausible interpretation is that older respondents are likely to be closer to the peak of their 'residential careers', a process which is associated with, e.g., labour market attachment and income development over time. Conversely, respondents in the younger age groups are presumably at earlier stages in both their residential and professional careers (cf. Oderth 2002; Næss 2005).

Regression analysis

Residential location satisfaction given everyday life accessibility needs was selected as the dependent variable in the analyses. Of the three residential satisfaction variables, it is the most suitable for exploring the research aims. It focuses on a 'middle' level/scale (in-between the specific dwelling and the more general residential area) of residential satisfaction, and is presumably more clearly related to everyday life accessibility.

Several preliminary OLS regression models[12] were run to scrutinize the interrelationships between residential location satisfaction and different sets of independent variables. However, due to restricted space and for clarity of exposition, only the final model (whose design is based on the findings obtained in the preliminary models) is presented in full (Table 2). The key research variables (distance, proximity preferences and distance satisfaction) were included as bundles of independent variables in different model designs. It should be noted these variable bundles are similar to each other as they represent different perspectives on the importance of accessibility to destinations for residential location satisfaction. However, the fact that the different model designs yielded varying outcomes suggests that the variable bundles nevertheless represent distinguishably different aspects of the issue.

[12] The analyses are OLS regressions conducted through the PASW 18 General Linear Model/Univariate ANOVA command.

Following findings in the preliminary analyses, the distance satisfaction bundle was included in the final model due to its revealed strong association with the dependent variable. As discussed below, there is also a possibility that distance satisfaction mediates the effects/importance of both proximity preferences and distance (Figure 4). The high explanatory power of the distance satisfaction variables (compared to the distance variables) suggests that they express something more than just distance. In fact, it may be argued that some compound index of different distance satisfaction variables could explain the variation in residential location satisfaction. This is what is analyzed in the final model, in which only the satisfaction with the distances to workplace, children's school, grocery store, clothes/shoes store, leisure/recreational area, urban centre and best friend have a significant effect on the dependent variable (see further below). It may be argued that using distance satisfaction variables to explain the variation in residential satisfaction is tautological. This is true to some extent, as the different types of satisfaction are clearly correlated, indicating interrelatedness of satisfaction at different levels. However, these measures are also dissimilar in that they represent different kinds of satisfaction and at different scales.

Distance satisfaction can be regarded as the comprehensive outcome of the relationship – on a concordance/disagreement continuum – between proximity preferences and actual distances to destinations. If so, proximity preferences and de facto distances are integrated in distance satisfaction, which then expresses the respondents' perception of their residential location in relation to relevant destinations. Distance satisfaction would then mediate the importance of proximity preferences and distance for residential location satisfaction (see Figure 4).

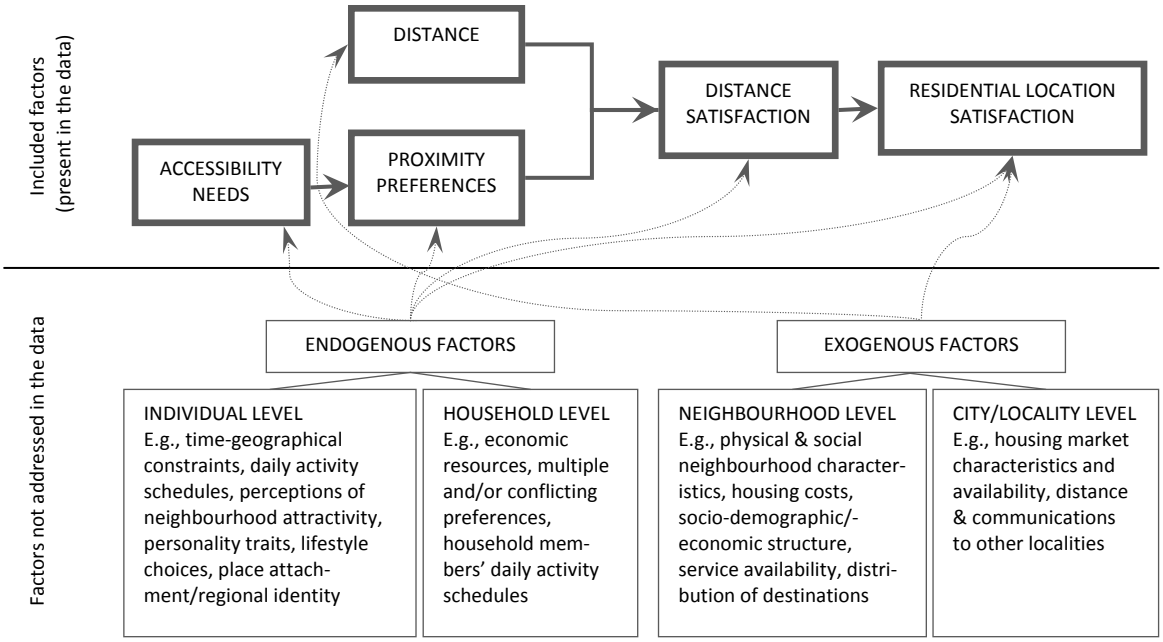


Figure 4. Tentative theoretical model of suggested relationships between residential location satisfaction, distance satisfaction, distance and proximity preferences, and possible factors that are not present in the survey data

However, the analysis is not in itself informative as to the causality of the interrelationships, e.g., whether distance satisfaction affects comprehensive residential satisfaction or whether residential dissatisfaction is the cause or consequence of considering moving in order to increase proximity. Hence, the interpretation suggested here is but one possibility. Also, the importance of distance and proximity preferences mediated through distance satisfaction is only part of a wide array of factors that may affect residential satisfaction on this spatial scale.

Figure 4 presents a tentative theoretical model of the suggested relationships between the key research variables in this study: accessibility, proximity preferences, distance, distance satisfaction and residential location satisfaction. The model also suggests some other factors that may be important in this context, although these are not explicitly addressed in the survey data this study is based upon. These factors may be both endogenous to individuals or households or exogenous at, e.g., the neighbourhood or city/locality level, and more or less subjective or objective in character. Further research, perhaps using multi-level analysis techniques that account for variation on different spatial scales, may shed some light on the importance of and relationships between these factors.

Results

The final model explained 28.6% (adjusted r2) of the variation in residential location satisfaction considering everyday life accessibility needs. Parameter estimates and significance levels are presented in Table 2.

In concordance with the descriptive analyses, the people who lived in the 20 largest cities were more satisfied with their residential location given their accessibility needs than the people who lived in smaller urban localities and rural areas. However, this pattern may partly depend on the chosen independent variable, in which residential satisfaction is considered with respect to location. On this scale, e.g., the lower service provision levels in rural areas may affect residential satisfaction. Given the differences in residential satisfaction patterns reported above (Figure 3), the relationships may differ in an analysis focusing on residential satisfaction on other spatial scales. This has been tested with models in which the independent variable is replaced with the other two measures of residential satisfaction. When general residential area satisfaction is considered the pattern ($p<0.001$) is the same as it was for residential location satisfaction, whereas concerning residential satisfaction at the dwelling unit level, rural dwellers were the most satisfied, and the people living the 20 largest cities were the least satisfied ($p<0.05$).

Respondents who owned their dwellings (private houses or condominiums) or lived in 'other' types of dwellings had higher levels of residential satisfaction compared to those who lived in rented apartments (cf. Vera-Toscano & Ateca-Amestoy 2008). As suggested by Ahlstrand (1984 in Lovejoy 2006), this may be due to homeowners having carefully thought through their residential location choices, or related to positive connotations of ownership as such.

Unsurprisingly, those respondents who had considered moving to increase the proximity to their workplace, service facilities and shops, cultural activities or family/friends were more dissatisfied with their residential location compared to those who had not considered doing so. The causality here is probably that dissatisfaction with distances to these destinations triggers thoughts of moving, but the latter may hypothetically also further reinforce dissatisfaction. These findings are in line with previous research into the relationship between residential satisfaction and residential mobility (Hur & Morrow-Jones 2008; Diaz-Serrano & Stoyanova 2008).

Among the distance satisfaction variables, workplace, children's school, grocery store, clothes/shoes etc. store, leisure/recreational area, urban centre and best friend were significant. All had a positive effect on residential location satisfaction; i.e., the higher the satisfaction with the distance to the individual destination (item), the higher the overall residential location satisfaction. With the exception of clothes/shoes store and to a lesser extent urban centre, there are apparent similarities in the destinations for which distance satisfaction was significant and the ones that ranked high in proximity preferences (Figure 1). Moreover, it is noteworthy that proximity to an urban centre is a proxy for proximity to many of the (non-significant) commercial and service destinations, i.e., it is representative of other destinations as well.

Table 2. OLS regression results

Parameter			B	Std. Error	t	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Intercept			2.040	.641	3.186	.001	.784	3.296
Satisfaction with distance to...	Workplace (***)		.137	.017	8.022	.000	.103	.170
	Child care (-)		.009	.041	.218	.828	-.071	.089
	Children's school (***)		.197	.036	5.459	.000	.126	.268
	Grocery store (***)		.091	.019	4.685	.000	.053	.129
	Shopping centre		.044	.025	1.753	.080	-.005	.093
	Clothes/shoes, etc. store (*)		.065	.028	2.334	.020	.010	.119
	Electronics, etc. store (-)		.000	.025	-.016	.987	-.049	.049
	Care centre (-)		-.003	.025	-.135	.893	-.052	.046
	Pharmacy (-)		.040	.027	1.484	.138	-.013	.092
	Cashpoint/ATM (-)		-.004	.019	-.183	.854	-.041	.034
	Post office (-)		-.001	.020	-.052	.958	-.040	.038
	Job centre (-)		-.080	.099	-.808	.419	-.273	.114
	Petrol station (-)		.013	.020	.624	.532	-.027	.052
	Cinema (-)		.016	.025	.631	.528	-.033	.064
	Theatre (-)		-.022	.024	-.938	.348	-.069	.024
	Restaurant (-)		.025	.022	1.134	.257	-.018	.069
	Leisure/recreational area (**)		.068	.021	3.286	.001	.027	.108
	Gym/sports centre		.009	.019	.489	.625	-.027	.046
	Urban centre (***)		.103	.023	4.524	.000	.059	.148
	Adult children (-)		.006	.021	.298	.766	-.035	.047
	Parents (-)		.017	.015	1.118	.264	-.012	.046
	Best friend (***)		.086	.014	6.220	.000	.059	.113
	Relative (-)		-.005	.015	-.343	.732	-.035	.025
Geographical residential environment (***)	20 largest cities		.116	.060	1.948	.052	-.001	.234
	Other urban localities		-.017	.054	-.309	.758	-.124	.090
	Rural areas		0	.	.	.	.	.
Type of dwelling/tenure (***)	Other type of dwelling		.162	.038	4.285	.000	.088	.236
	Rented apartment		0	.	.	.	.	.
Considered moving to increase proximity to…	Workplace (***)	Yes	-.281	.051	-5.457	.000	-.382	-.180
		No	0	.	.	.	.	.
	Service facilities and shops (***)	Yes	-.306	.074	-4.144	.000	-.451	-.161
		No	0	.	.	.	.	.
	Cultural activities (**)	Yes	-.175	.062	-2.817	.005	-.296	-.053
		No	0	.	.	.	.	.
	Family/friends (***	Yes	-.201	.044	-4.576	.000	-.288	-.115
		No	0	.	.	.	.	.

Significance levels: - p> 0.05; * p<0.05; ** p<0.01; ***p<0.001

Together, the significant destination satisfaction variables represent a mix of everyday life activities (apart from clothes/shoes etc. store). With the exception of best friend, the social destinations were not significant. This indicates that the practical dimension of proximity preferences is more important than the social dimension when it comes to residential location satisfaction.

The share of variation in the dependent variable that remains unexplained suggests that there are potentially many other variables that are of importance for residential satisfaction at this scale. However, these unknown variables do not seem to include 'standard' background factors such as age, gender, educational level and occupation, since these were non-significant in the analyses.

Concluding Discussion

Using data from a 2008 survey and drawing on the literature on individual accessibility, residential preferences and residential satisfaction, this paper has addressed accessibility in terms of individuals' valuations of the importance of proximity to various destinations, their satisfaction with the actual distances, and how this may be related to residential satisfaction.

The results are largely in line with previous research on Swedish conditions as well as international perspectives. On a general level, there were major similarities in individuals' proximity preferences across different subgroups. Certain destinations were important to people regardless of gender, age and geographical residential environment. However, there were also differences across the subgroups, reflecting variations in life conditions and priorities for men and women and across the life course, as well as for people living in rural and urban areas.

The destinations that ranked high in the survey respondents' proximity preferences appear to be structured along two major dimensions with practical and social rationales, respectively. Proximity preferences varied across geographical categories, gender and age groups, reflecting differences in life conditions, personal interests and social roles.

The preferences largely corresponded with actual conditions. The respondents lived near, and were satisfied with, the distances to most of the destinations to which proximity was considered important – although there were also variations across groups, especially rural and urban dwellers. The results even suggest the existence of 'proximity surpluses' concerning several destinations, but there were also 'proximity deficits' with regard to social relations. The distribution of individuals' self-reported distances (Figure 2) to destinations suggests that the differentiation of distances primarily appears concerning social destinations. For the majority of other destinations, the distances varied much less (and were shorter). In this context it is of course worth mentioning that 'near' and 'far' are relative concepts, and may also be interpreted on different spatial scales. Moreover, what is near depends on the destination in question (e.g., everyday life destinations or social destinations), and a certain distance may thus be perceived as either long or short.

Given the high levels of distance satisfaction, it is perhaps unsurprising that satisfaction was also high concerning the residential situation and the accessibilities it offered, on several scales. People were largely satisfied with where and how they live, although there were also differences across groups and measuring scales. Notably, the level of satisfaction of rural and urban residents varied across different aspects of their residential situation, indicating that these groups make different residential trade-offs. The weighting of preferences and the content of residential location decision processes differ, and consequently so do the outcomes regarding proximity to other places. The regression analysis suggests that residential location satisfaction is significantly related to distance satisfaction with regard to certain destinations; type of geographical residential environment; type of dwelling/tenure and whether the respondents had considered moving in order to increase proximity to certain types of destinations. The results largely confirm the descriptive analyses, and to some extent also reflect previous research into residential satisfaction. The final model explains 28.6% of the variation in residential location satisfaction. The findings

suggest that basic accessibility needs and activities (work, children's school, grocery store, leisure/recreational area, urban centre and best friend) are what matter most for residential satisfaction on the 'location' scale (although distance satisfaction concerning clothes/shoes etc. store, which is probably not an everyday kind of destination for most people, was also significant). Hence, the social dimension of proximity preferences appear to be subordinated in relation to the practical dimension in an everyday life perspective; in a way, practical needs take priority over personal wishes.

It is possible that the high satisfaction levels are partly affected by rationalization mechanisms. Self-reports of residential satisfaction often result in positive rather than negative ratings as a result of a 'Pollyanna' effect, an inclination for positive valuation/expression (Boucher & Osgood 1969; Hur & Morrow-Jones 2008). Another possibility is that people grow so accustomed to their residential situation that they do not think of it in terms of aspects that may be lacking or problematic, and instead develop an acceptance of their situation, with its upsides and downsides. Furthermore, if place attachment or place-related identity is taken into account, expressions of dissatisfaction with one's living conditions may also imply a negative self-image, and are hence avoided (Fleury-Bahi et al. 2008).

Knowledge of people's residential preferences and satisfaction with current conditions is important for several reasons. Home is a key location, not the least in an everyday life perspective – it is the point of departure for many everyday life activities as well as a key venue for reproductive and social activities. The importance of home lies not just in the dwelling unit itself, but also in its spatial relations to other places within and beyond the place of living. Residential satisfaction is a central aspect of general quality of life (Rogerson et al. 1996 in Phillips 2006) and represents an important dimension of social welfare.

A spatial planning and housing policy that is knowledgeable about people's needs, wishes, and prerequisites for everyday life accessibility, and caters to them as much as possible, may enhance residential satisfaction, quality of life, and the coordination of individuals' and households' everyday life. These aspects may all be included in the social sustainability concept. For instance, joint localization of important everyday activities (work, service) close to residential areas appears to promote residential satisfaction. Also, knowledge of factors that are associated with lower residential satisfaction enables targeted efforts to ameliorate such conditions. Moreover, spatial planning should integrate the perspectives of those who depend on its outcomes, and not solely rely on experts' perspectives (cf. Lind & Bergenstråhle 2004), in order to contribute to the building of a societal physical fabric that allows people to live their lives in accordance with their needs and wishes.

A key issue in this research is that individual accessibility cannot be discussed solely in general, normative terms or operationalized using 'objective' measurements. Attention must be paid to the needs and wishes of individuals, since a certain residential characteristic may be considered both an advantage and a disadvantage by different people. Apart from the basic necessities of life, what matters is the 'accessibilities' that are deemed most relevant by each individual. In conclusion, different accessibilities matter to different people.

Acknowledgements

This research was funded by the Swedish Research Council. Kerstin Westin, Einar Holm, Magnus Strömgren and Erling Häggström Lundevaller have contributed to this paper in different and important ways, as have the participants of the NECTAR accessibility cluster – especially Juan Carlos Martín – and three anonymous referees.

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